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The mental health of the citizens of a community is in part dependent upon their ability to join in and obtain the rewards of the fulfilled life of a competent member of society. This has been very difficult for the disadvantaged to accomplish because their backgrounds have been one of deprivation and their opportunities have been limited. But the incompetence of the disadvantaged is not significantly attributable to genetic deficiencies; rather it is mostly attributable to their deprived backgrounds. Head Start and similar compensatory education programs have been created to alleviate the intellectual and cognitive deficiencies of disadvantaged children. Such programs have met with varied success. Intervention earlier than age four or five would be good, however, because of the importance of early development. This intervention should be coupled with some form of parent education or parent participation. Such a total program (called "Centers for Children and Parents)" has been suggested. Not only would young deprived children be given a compensatory education at such a center, but professional personnel there would establish relations with the parents and counsel them as to proper child rearing practices. (WD)

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TOWARD THE PREVENTION OF INCOMPETENCE*

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TOWARD THE PREVENTION OF INCOMPETENCE*

By J. McV. Hunt

The United States Public Health Service has built a tradition of utilizing knowledge of natural resources to prevent diseases and to improve the health of the populace. Classic examples are the purification of water to prevent typhoid and other diseases, universal vaccination to prevent smallpox, and the spraying of ponds to kill mosquitos to prevent yellow fever and malaria. Today, we are witnessing something of a struggle over floridation of water supplies to prevent tooth decay. This tradition of the Public Health Service has utilized the results of biological and ecological research to guide its interventions into the circumstances of human beings to prevent disease.

The notion of mental health has, by a largely verbal analogy, called for a public mental health service. This analogy is the basis for a hope that investigators of human development and of the influences of social interaction in the family and in neighborhoods will lead to knowledge permitting a Community Mental Health Service to provide innovations in the social processes of communities to prevent mental disorders and to improve the general level of human well-being. While the mental disorders, or what are commonly called mental diseases, have in common the element of discomfort or suffering with other diseases, their etiology typically appears to be fundamentally different. The etiology of traditional diseases consists of infections or of breakdowns in organic functioning. While it is true that infections and breakdowns in organic functioning can disorganize an individual's behavior and social functioning, mental health traditionally has become concerned with those defects in functioning which arise out of the history of defects in the individual's informational interaction with his circumstances. These result in the distress-producing conflicts among the individual's motives, in frustrations of goal-directed behavior, and in failures of social communication with such foregoing consequences as their result. What is now being called community mental health is an extension of the Public Health Service to prevent these distressful disorders of behavior and social functioning. From the analogy of mental health to organic health, the limiting goals of community mental health have extended not merely to a hopeful emptying of the psychiatric hospitals by preventing psychoses and neuroses, but also to the prevention of such instances of mass violence as we have seen so often this past summer, and to the general improvement in the quality of human life. These are the broad goals and hopes.

Those concerned with mental health have most commonly focused their attention on the emotional aspects of behavior disorders. While it is true that emotional distress is the most evident aspect of many disorders of behavior and functioning, focusing upon the emotion is much like a physician focusing upon the fever which is a highly evident aspect of a plethora of infections and of many breakdowns in organic functioning. The emotional distress in behavior disorders is an inherent aspect of frustration (see Brown & Farber, 1951; Amsel, 1958;

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Amsel & Roussel, 1952) and of conflict between intentions and purposes (see Hunt, 1963, p. 58 ff). But emotional distress can also be an aspect of encountering information that is incongruous, strange and unexpected (see Hebb, 1946a, 1946b; Hebb & Riesen, 1943). It can be an aspect of interference among attitudes and beliefs in what Festinger (1957) has called "cognitive dissonance." In fact, the emotions are an integral aspect of all functioning, though they need not be distressful, and sometimes I wish Aristotle had not fastened upon us the triune conception of mind in which emotion (affection) was separated from motivation (or conation) and from thought (or cognition). In our day, one of the major bases for frustration and for the emotional distress that goes with it, in that large share of our population which we are coming to call the culturally deprived, is inadequate in competence to cope with the circumstances encountered and to obtain the gratification that our affluent society makes highly evident by advertising in our mass media.

Incompetence as a Disease

We live in a day when the opportunities for those with high competence -- consisting in symbolic skills, in ability to solve problems, in future-oriented motivation to achieve and to take responsibility, and in acceptable standards of conduct -- greatly outruns the supply. At the same time, automated machines do the tasks of heavy labor, many of the routines of manufacturing and of clerical work, and even many of the tasks in farming. As a consequence, the demand-opportunities for those with low competence has been dwindling rapidly. Without the abilities and skills required, they lose their stake in the mainstream of American culture with its high hopes and high productivity.

One basis for the plight of our American cities resides in the fact that the industrial revolution has come to agriculture. It is said that more people have moved from the farms to the cities since the end of World War II than moved from the farms to the cities from the time of the landing of the Pilgrims to the end of World War II. At the turn of this century, nearly 90% of our population lived on farms in very small towns. Now that percentage is of the order of 10%, and 90% live in urban centers -- a majority of them in our expanding, impersonal megalopoli.

Most of those who have moved from the farms to the cities in recent years have been poor and marginal farmers with highly limited skills. A very large share of them were colored share-croppers from our rural South. Nowhere has the industrial revolution in agriculture proceeded more rapidly than in our southern states. As a consequence, the Negro ghettos of our large cities have been expanding very rapidly. At the same time, the Supreme Court decision of 1954 has provided the promise of desegregation and a hope for increased economic opportunities for Negroes. Unfortunately, because of their history of slavery coupled with the historical limits of their economic opportunities to share-cropping or menial work, a large share of Negroes have never had an opportunity to move out of poverty and lower-class status in our society. They, like lower-class white people, provide their children with very limited opportunities for learning during their preschool years. Because of these factors and because of the inadequacy of schools in the South and in the slums, entirely too few Negroes

have been equipped to grasp the new opportunities provided for them at levels above the unskilled. Because opportunities for the unskilled have been shrinking rapidly, the proportions of Negroes who are unemployed is especially high. Add to this the fearful impersonality of the newly formed neighborhoods in the Negro ghettos. When asked, for instance, why northern Negroes appear to be more violent than southern Negroes, the NAACP's Roy Wilkins replied that "In the North the Negro finds himself in new surroundings, usually without his family, without his old neighbors, without his church. In Harlem, he's just John Smith." Combine these factors and one has the setting for the urban problems of our day with their attending violence.

These factors, in brief outline, are also the main sociological factors underlying the increased, and continually increasing, importance of incompetence in our highly technological society. Incompetence is far from the only factor to be overcome in our coping with the violence which has been so prominent during this past summer. But, even after we have invented economic devices to provide jobs for the umemployed, even after we have coped with inadequate housing, and even after we have coped with racial prejudice, the burden of the incompetence of the poor will remain as it does in the case of poor whites. Moreover, the impersonality of our urban neighborhoods will remain to encourage incompetence. From the standpoint of community mental health, even though the analogy may be weak, incompetence is like a disease. As such, it is one of the major etiological sources of the frustration and the emotional distress associated with the inability of the poor to participate in the mainstream of our increasingly technological and increasingly affluent society.

Education Versus Mental Health

If one accepts for the purposes of exposition this conceptual twist which makes incompetence as an analogue of disease, then it follows that our educational institutions have been and are one of the major resources of community mental health. Unfortunately, educators have tended to focus their attention on the cognitive -- on skills and knowledge and their acquisition. Also, they have traditionally neglected the affective and conative aspects of acquiring skills and knowledge. To be sure, educators have moved a long way from the traditions set by Luther and Calvin who founded the reading schools in the days of the Reformation. Then, insofar as the affective was considered at all, it was a matter of inducing fear for conative or motivational purposes. The goal of inducing this fear was to eradicate the original and natural sin of laziness, and to make learning to read less undesirable and painful than other activities or remaining idle. Student adjustment and student satisfaction in the process of acquiring skills and knowledge are still all too often considered by educators and teachers a side issue when they are actually essential aspects of the process of acquisition -- or learning, if you will.

On the other hand, it is equally unfortunate that those whose central focus has been on mental health and mental hygiene have so emphasized the emotional factors of social adjustment that they have commonly lost sight of the skills, knowledge, motives, and standards of conduct which underlie competence. These

are the essential goals of education. Despite the 2,600 years that separate the days of Aristotle from our own, we still chop up the individual student in terms of the logical constructs with which Aristotle divided mind in general (affection, conation, cognition). We even carry this division into our governmental institutions. The National Institute of Mental Health must compete with the Office of Education for Congressional appropriations, and thus those in the bureaus concerned with mental health and the emotional side of man become the competitors of those in the bureaus concerned with education, and the cognitive side of man. Moreover, this conceptual division is also reflected down at the level of the community where those in the mental health clinics are all too often competitors of the teachers in the schools, or at best collaborators who look askance at each other's methods and concerns.

Recent Evidence and our Traditional Conceptions of the Basis for Incompetence

This schism, which I see deriving historically from the Aristotelian conception of triune man, is but one conceptual relic from the history of thought that has hampered our dealing with incompetence through community mental health. Another is the conception of incompetence as something basically inborn, something that will inevitably become manifest. Such a conception was dominant in Western thought from the days of the debates over Darwin's theory of evolution and the interpretations of its implications for improving the lot of man by Francis Galton (1869, 1886) until very recently. Our investigations of psychological and social development since World War II, however, have largely destroyed faith in these traditional beliefs about the basis for incompetence (see Hunt, 1961). In doing so, the evidence from these investigations has also provided us with justification for a hope that we may ultimately be able to prevent a substantial share of incompetence.

Evidence Dissonant with the Concept of Fixed Intelligence

Evidence dissonant with the belief in fixed intelligence began to appear before World War II. But so strongly fixed were the beliefs in fixed intelligence and the beliefs in predetermined development that the cognitive dissonance created by these early bits of evidence motivated chiefly efforts to discredit them. Consequently, these bits of evidence lost most of their suggestive, corrective significance (see Hunt, 1961). Since World War II, various lines of evidence dissonant with these beliefs have accumulated in such quantities that the beliefs in fixed intelligence and predetermined development are no longer tenable.

First, in genetics, the work of Johannsen (1909) -- his distinction between phenotype and genotype, his recognition that the observable phenotype is a product of the interaction between the genotype and the circumstances encountered -- has been given equal recognition with that of Mendel (1865), which had been formerly misenterpreted to justify the belief in hereditary predeterminism. Even the sexual anatomy of snow-pool mosquitos, for instance, has been modified by exposing genotypic male larvae to a temperature of 29°C during their embryonic maturation. Thus, while the genotype is of the utmost importance, it can no longer be seriously argued that the genotype guarantees either a given rate or

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a given outcome of development unless the organism encounters appropriate circumstances.

Second, the theorizing of Donald Hebb (1949) has inspired a variety of investigations which indicate that the intelligence -- i. e., problem-solving ability -- of animals is far from fixed. Hebb (1947) himself, and such colleagues as Forgays & Forgays (1952), Forgus (1955a, 1955b) and Hymovitch (1952) have found that rats reared under various kinds of enriched perceptual circumstances are better maze-problem solvers as adults than litter-mates reared in opaque laboratory cages. Moreover, Thompson & Heron (1954) have found superiority in the problem-solving ability of pet-reared Scotty dogs over cage-reared litter-mates that is, if anything, more pronounced than the degree of superiority that Hebb (1947) found for pet-reared rats over their cage-reared litter-mates. Such evidence suggests that the importance of early experience for later problem-solving ability may well increase up the evolutionary scale. This is but a suggestion, however, and it may be wrong. For instance, recent studies (Angermeier, Phelps, & Reynolds, 1967; Griffin & Harlow, 1966) appear to yield no evidence of damage to the ability of monkeys to acquire learning sets from being reared in solitude. These monkeys reared in solitude are deficient in social behavior, however, and whether readiness to acquire learning sets should be the criterion of intelligence or problem-solving ability is a matter of definition. It is conceivable that the learning sets employed in these recent studies are so elementary for the monkey that they require the acquisition of no others lower in the hypothetical hierarchy of abilities constituting intelligence. On the other hand, the Hebb-Williams (1946)detour tests for rats and dogs do appear to require that the animals have learned subordinate abilities if they are to solve the detour problems readily. This question of the operational criteria of problem-solving ability calls for much more careful analysis than it has so far received.

Third, a variety of investigations have also yielded evidence indicating that the longer organisms live under any given kind of circumstances, the harder it is to alter the influence of these circumstances on either their developing anatomies or their systems of behavior (see Hunt, 1961, p. 321 ff).

Fourth, at least three different lines of investigation indicate that encounters with circumstances appear to influence the maturation of neuroanatomy as well as the development of behavior. Studies of the histological and histochemical effects of rearing young mammals in the dark have shown that glial cells and retinal-ganglion cells fail to mature properly and that the production of ribonucleic acid (RNA) is deficient in chimpanzees (Rash, Swift, Riesen & Chow, 1961), in kittens (Weiskrantz, 1958), rabbits (Bråttgard, 1952) and rats (Liberman, 1962) reared in darkness. Conversely, evidence of greater growth in cortical tissue and of higher total acetylcholinesterase activity of the cortex has been found in rats reared in complex environments than in rats reared in the simpler environments of laboratory cages (see Altman & Das, 1964; Bennett, Diamond, Krech, & Rosenzweig, 1964). Some of these studies have stemmed (1) from the theorizing of Donald Hebb (Rash, Swift, Riesen & Chow, 1961), others (2) from the biochemical theorizing of Hyden (1960; see Bråttgard, 1952 and Hyden & Egyhazi, 1962), and (3) the instigating conceptual origins of the others I do not know.

Fifth, since World War II, evidence of a similar import from investigations with human subjects has been accumulating. Instead of the predicted decreases from differential fertility, (the fact that more than half of the new generation comes from the bottom third of the population in economic, educational and social status), the tested intelligence in successive decades has been repeatedly found to increase (see Hunt, 1961, pp. 337-348). Clearly, the findings of Skeels & Dye (1939) of increases in tested intelligence in infants transferred from an orphanage to a ward for young moron women in a school for the mentally retarded should not have been so roundly ridiculed. A follow-up by Skeels (1966) indicates that this shift followed by adoption, as compared with continued orphanage rearing, made the difference between lives of full participation in our society for those who were shifted and later adopted and lives as institutionalized wards of society for those who remained in the orphanages.

Sixth, bits of evidence uncovered by such investigators as White and Held (1966) and by David Greenberg and Ina Uzgiris in my own laboratory, indicate that the rate of psychological development in Human infants is far more plastic than has been believed. White & Held (1966) have reduced the median age of appearance for that form of eye-hand coordination, which they call "mature reaching," from a median of 145 days to a median of 87 days in orphanage-reared infants. They achieved this hastening by means of a program of enrichment that included handling the infants some 20 minutes a day, turning them on their stomachs for 15 minutes after each of three feedings a day, and arranging things in a complex stabile appropriately to enable the infants to perceive them visually and to feel them with their hands . Probably the most important factor was the last named. Greenberg & Uzgiris, moreover, have hastened the mean age of appearance for the blink response in home-reared infants from a little over 10 weeks to about 7 weeks merely by hanging a stabile over each of their cribs beginning at 4 weeks of age. It is not that the age of mature reaching and the age of the blink-response are themselves important, nor that such hastening of development is permanent, but the fact that such behavior can be hastened so much by perceptual interaction with circumstances indicates that much of what has been thought of as maturation is highly plastic and subject to influence from environmental encounters. Moreover, these findings suggest that such increases in the rate of development may possibly be cumulative. We must investigate this possibility.

Seventh, a new hierarchical conception of intelligence is replacing the conception of intelligence as a dimension of individual persons (see Hunt, 1967a). This new conception has been proposed on the basis of such radically different kinds of evidence as the developmental observations of Piaget (1936), the findings of factor analysis by Ferguson (1954, 1956) and by Humphreys (1959, 1962), and investigations of adult problem-solving by Gagne (1966; and Gagne & Paradise, 1961). What is important for my argument here is the large role this conception makes for learning, broadly defined as the effects of environmental encounters, in the development of intelligence (see Hunt, 1967a).

Finally, recent findings of Wayne Dennis (1966) suggest that the circumstances encountered can make an exceedingly substantial difference in tested intelligence.

Dennis has given Goodenough's (1926) Draw-a-Man Test to groups of typical children of six and seven years of age from some fifty cultures over the world. The original assumption that this test would be culture free was early called into question when typical Hopi Indian children turned up with a mean IQ of 124 (Dennis, 1942). This IQ of 124 approximates the averages for samples for upper middle class children of American suburbs. This same mean of 125 holds for samples of children growing up in Japanese fishing villages (see Denis, 1966). At the other, lower end of the distribution, Dennis (1966) finds Bedouin Arab children with an average IQ of 53. Here, then, is a range of approximately 70 points in mean IQ for typical groups of children from various cultures. It is highly unlikely that such a range has its sole basis in heredity. The most obvious correlate is degree of contact with pictorial art. Hopi children, like the children growing up in Japanese fishing villages and like children of our American suburbs, have continual contact with the pictorial arts. On the other hand, Moslem Arab children, where religion prohibits graven images, have little contact with pictorial arts. Among Arab children, moreover, variations in Draw-a-Man IQ are clearly associated with amount of contact with Western culture and the pictorial arts inherent in Western culture. The children of Lebanon with a maximal degree of such contact have a Draw-a-Man IQ of 98. The Shilluk children of the Sudan, with almost no such contact, have a mean Draw-a-Man IQ of 53. So, even with samples of Arab children, the range of IQ points is 45 points. It may well be easier to modify the Draw-a-Man IQ through degree of contact with pictorial arts than it is to modify IQs derived from such tests as the Stanford Binet or the Wechsler Children's Scale through encounters with circumstances. Nevertheless, these findings of Dennis suggest that the circumstances encountered in the course of early development can make a far greater difference in the IQ, however measured, than we have been accustomed to believe.

Evidence Concerning the Basis for Incompetence in Children of Lower-Class Background

So long as it was tenable to believe in fixed intelligence and predetermined development, parsimony encouraged the attributing of class and race differences in competence, as indicated by the IQ, to unmodifiable hereditary constitutions. While it is still impossible to rule out an appreciable role for heredity in class and race differences, the evidence I have just synopsized indicates that the circumstances encountered in lower-class child-rearing could readily enough have sufficient effect on a major share of children to make the difference between incompetence, on the one hand, and competence sufficient for full participation in our technological culture, on the other hand.

Recent investigations demonstrate that the child-rearing practices of parents of lower-class background do indeed make for incompetence. Such investigations include those of lower-class Britains by Bernstein (1960, 1961), lower-class Israelis by Smilanski (1961, 1964), and of lower-class Negroes in Chicago by Davis (1948), Davis and Havighurst (1946) and by Hess and Shipman (1964), and lower-class Puerto Ricans in both the U.S. and Puerto Rico by Oscar Lewis (1966a). These investigations make it clear that children of

parents from lower-class backgrounds all over the world lack opportunities to acquire the symbolic skills, the motivational habits, and the social standards which underlie competence. Parents of lower-class backgrounds typically talk less often to their infant children than do parents of the middle class (Bernstein, 1960, 1961; Bronfenbrenner, 1958; Chilman, 1965). These parents themselves have often failed to utilize prepositional relationships with precision, and their syntax is confused. Thus, they serve as poor linguistic models for their young children. Furthermore, these parents seldom ask questions that prompt their children to attend to the characteristics of objects and to the various kinds of relationships among them and to respond with language describing these characteristics and relationships. On quite the contrary, when these children of the lower-class do ask questions, their parents all too often tell them to "shut up," and with no reason why. Supplying reasons is important for developing a conceptual basis for limits on behavior.

On the side of motivation, the competence required for participation in the mainstream of society calls for some willingness to accept privation at the moment in favor of future goals and future status, and it calls for ambition to achieve and for initiative. Lower-class parents have not learned such motivational habits themselves (Bronfenbrenner, 1958; Chilman, 1965; Davis, 1948; Lewis, 1961, 1966b). Since these parents have never known enough consumable goods to go around, they, like rats frustrated in infancy (Hunt, 1941), are prone to take urgently what goods are available at the moment. Their children have little reason to do otherwise. Seldom do their children learn anything about time. They do not even learn how to tell time because clocks are seldom available. In such a setting, even fantasies of the future tend to be meaningless. Moreover, to lower-class parents a good child is a quiet child who does not disturb their preoccupations (Gray & Klaus, 1963; Klaus & Gray, 1967). Though lower-class mothers take pride in their children and may even over-dress them for school, they typically send them off with the counsel to be good, and "do like the teacher says." Defining "being good" as being quiet and compliant hardly builds a high evaluation for achievement and hardly encourages initiative. As a consequence, the lower-class children have little or no opportunity to acquire the future orientation, the concern for achievement, and the initiative which constitute the motivational aspects of competence.

So far as standards of conduct are concerned, lower-class children typically learn them from their own peers (Bronfenbrenner, 1966). With both parents typically absent from home, at work or somewhere else most of the day, the chief source of the standards acquired is the peer-gang, and seldom are these standards those of established society. Moreover, hardly does the conduct of their parents fit the standards of the middle-class in the mainstream of society (Warner, et. al., 1949; Warner & Lunt, 1941).

In short, what the children of parents of poverty and lower-class background learn in the way of language, motivation, and standards of conduct before they are old enough to enter our traditional schools makes them incompetent and typically unfits them to profit from the curricula of our traditional schools. This occurs despite the abundant love their parents have for their children. Lacking

the competence to cope with the school situation, it is hardly surprising that these slum-reared (rural or urban) children soon lose hope of succeeding there, become fed up with the school, and drop out as soon as they can.

Evidence Pointing Toward a Prescription

Project Head Start was devised to provide children of the lower-class with the opportunities that would ameliorate their incompetence and enable them to cope with the circumstances in our traditional schools. The goal is right. In the light of the institutionalization of the logical constructs from Aristotle that separate mind-in-general into components (affection, conation, and intellect), it is interesting and significant that our political leaders found it expedient to house Project Head Start in neither the National Institute of Mental Health, where affection is the central concern, nor the Office of Education, where intellect is the central concern. Even so, the first prescription for compensatory early childhood education has been based largely on traditional nursery-school curricula. Unfortunately, although some of the historical leaders of nursery-school education were explicitly concerned with compensating children of poverty for the inadequacies of their early experience (see especially Margaret McMillan, 1919, of England, and Marie Montessori, 1909,of Italy), what became the traditional curricula of our day were devised largely to provide free play for and to promote muscular growth in the highly controlled children of middle-class mothers. Because we psychologists and educators considered it too soft-headed during the past half-century to be worthwhile even to try experimentally to improve the abilities of children from lower-class backgrounds, we shall have to try it now when we are being asked for ready-made solutions. I can only hope that our society allows us to fail more than once without withdrawing the support required to permit us to try again with the lessons from our failures (see Hunt, 1967b).

While none of the Head Start operations appears to have done any harm other than disappointing those adults who hoped for too much, some have apparently achieved considerably more with children than others. According to the evidence that I have seen to date, those operations have succeeded best which have employed curricula that deliberately attempted to teach cognitive structures, the linguistic skills required to understand what the teachers in traditional schools are talking about, rudimentary numerical skills, and motivational concern for achievement (O'Brien, 1967; Weikart, Kamii, & Radin, 1967; Weikart, 1967). Those children who get these skills seem to be better able to succeed in the schools. From comparisons of their own performance with that of their peers from more fortunate backgrounds, they also appear to gain some of the self-respect and motivation required to continue participation, and they seem possibly even to be imbibing the standards of conduct which are required for participation in the mainstream of society directly from their participation in the school situation. The evidence, soft as it may be, from such innovative programs as that of Bereiter and Engelmann (1966), Marie Hughes, (personal communication), O. K. Moore (personal communication), Nimnicht, Meier, McAfee (personal communication), and others appears to be supporting such still tentative conclusions. Before we can know, however, we shall have to have studies that follow up groups of children in the schools through the drop-out age. It may also be highly important to revise the curricula of our-

traditional schools.

Centers for Children and Parents

Compensatory education beginning no earlier than age four, expensive as it is, may be too little and too late, even at best, to overcome sufficiently the incompetence inculcated during the first four years to enable the children of poverty and lower-class background to escape sufficiently from their incompetence-inducing circumstances to enjoy full participation in the mainstream of our highly technological culture. In the tradition of the Public Health Service, we need preventative measures -- something to prevent incompetence that is analogous to innoculations against smallpox. We need to develop a way to intervene in the child-rearing of parents in poverty, who have been reared in lower-class backgrounds, during the first four years of their childrens' lives. We need to intervene in a fashion that will enable the children to acquire the needed cognitive skills, motivational habits, and standards of conduct. We need to intervene in a fashion that will also enrich the lives of the parents. Again, recent investigations and attempts at innovation in early childhood education provide a suggestion for a promising preventive approach. The suggestion comes as much from considering the failures of certain kinds of innovative interventions in conjunction with initial promise of success in others.

On the side of failure, clinical psychologists, psychiatrists, and social workers have attempted in a number of instances to improve the child-rearing practices of parents from chronic poverty by counseling them individually and in groups. So far as I can ascertain from the evidence I have seen, these attempts to intervene by means of psychotherapy-like approaches have failed completely. On the other hand, Rupert Klaus, and Susan Gray (1967) and their colleagues associated with the "Early Training Project" at the George Peabody College for Teachers in Nashville, Tennessee have taken another tack. They developed first a special summer nursery-school for environmentally disadvantaged children. The curriculum of this nursery school aimed to teach children the language skills, attitudes, and motives required to cope with school. During the summers, a home visitor brought each mother to the nursery school where the mother could see for herself not only what the teachers were doing with her child, but also the results of the teachers' approach in the behavior of her own child and of other neighborhood children familiar to her. This home visitor was a certified teacher with a background which made her well acquainted with the views and attitudes of the mother. She interpreted for them, sometimes while the mothers were observing the teacher with their children, what the teachers were doing and why. The home visitor attempted also to relate the teachers' work to what each mother did with her children at home. Moreover, during the periods between the summer sessions of nursery school (September to May), the home visitor saw each mother every other week. During these visits, the home visitor undertook to demonstrate for the mother such matters as how to read a story with enthusiasm (or "bubble" in the language of these mothers), how to reinforce children for acquiring new skills and finding new ways to cope with such children's problems as getting dressed, how to talk with her children about such homemaking operations as peeling potatoes while in the process of doing so. The home visitor also let

the mother discuss her own problems and helped her to find new ways of coping with them.

At regular intervals (e.g., before and after each summer session of nursery school), examiners tested the two groups of 19 children attending the nursery school and also two other contrast-groups of children. One of the former two groups attended nursery school for three successive summers (1962, 1963, and 1964) and got bi-weekly visits during the course of three successive periods of fall-spring-winter. The other group of 19 children attended nursery school for two summers (1963 and 1964) and got bi-weekly visits during two winters 1963-64, 1964-65). The contrast groups consisted of children of families of socio-economic-educational status comparable to that of the children in the nursery school. The children in one of these groups lived in the same neighborhood as the children in the nursery school. The children in the other lived in a community some 60 miles from Nashville. The examiners tested all groups at approximately the same times. The test used included the Stanford-Binet, and for later testings, the Wechsler Intelligence Scale for Children, the Peabody Picture Vocabular Test, and the Illinois Test of Psycholinguistic Abilities. Once the children were in public school, the regular readiness and achievement tests were included.

The test performances show spurts of improvement between the testings made before and after the summer sessions of nursery school. These improvements clearly separate the children who got the nursery school and home visits from those who did not, and the superiority of their test performances continues through the first grade. Whether they will continue through the sixth grade in the form of the lesser rate of drop-out remains to be determined. This is the ultimate criterion of success for such programs of intervention.

The results also show two other phenomena of highly significant promise. First, the younger siblings of the children in the two nursery school groups proved to be significantly superior in test performance to the younger siblings of children in either contrast group. This finding implies that what the mothers were learning about child-rearing was affecting the younger children as well as those in the nursery schools. This Klaus and Gray call "vertical diffusion." Second, the children of the contrast groups who lived in the same neighborhood as those attending the nursery school and receiving the home visits gave performances on tests superior to the performances of children living some 60 miles away. This finding, termed "horizontal diffusion," suggests that these mothers who had learned new child-rearing practices were somehow communicating them to their neighbors to a significant degree.

Taken in conjunction, the failure of professional counseling and the promise of demonstrations is instructive. Attempting to modify the child-rearing practices of parents in poverty by means of professional talk alone fails, and perhaps this should not surprise us inasmuch as one of the chief characteristics of such parents is their lack of facility in linguistic communication. On the other hand, these poor parents of lower-class background can learn improved ways of child-rearing from opportunities to observe the behavior of relatively expert teachers and to observe the effects of the experts' behavior on the children's behavior when these effects

are then explained in language they can understand. Moreover, these parents seem to be able somehow to communicate these improved practices in child-rearing to their neighbors. This somewhat surprising finding, if verified, is a source of substantial hope for it suggests that improving the child-rearing of some families within a neighborhood will be communicated to others.

Such findings, coupled with the observational evidence that parents of lower-class background do love their children quite as much as any parents, suggests a mode of intervening in community organization which fits well the traditions of the Public Health Service and with what is now called "Community Mental Health." This mode of intervening promises not only to serve as an effective analogue of inoculation against incompetence, but also to have a salutary side-effect in reducing the fearful impersonality of the newly formed slum neighborhoods of our megalopoli.

The suggested intervention would take the form of Centers for Children and Parents. Such Centers should provide an open door where the families in a neighborhood can obtain the full range of the services available within their communities. Moreover, they would mobilize the concern these parents have for their children's welfare by providing the leadership required to develop day-care facilities for infants and toddlers, and Head-Start-like facilities for children of 3, 4, and 5 years. The Centers should provide not only the professional personnel for these facilities, but also the leadership required to get the fathers, and the older siblings of the infants and young children to take their turns as teachers' aids in conducting these facilities. The professional persons in charge would thereby serve as models for these parents and for older children. The findings of Klaus and Gray (1967) suggest that the models for these parents would indeed be imitated. Moreover, demonstrators of child-rearing practices should be sent into the homes to show mothers and fathers how to apply the new practices, illustrated in the day-care facilities, in the home situation. These home-demonstrators should, following the lead of Klaus and Gray, demonstrate such down-to-earth matters as how to reinforce behavioral evidences of new competence, how to read a story to a two-year-old, how to talk to children about operations in progress, and how to ask questions that prompt a child to note the characteristics of objects and their relationships to other objects. In addition, for the benefit of the older preschool children, these professionals should show both their parents and their older siblings how to show them the sights and sounds of the resources of the community: the parks, the museums, and even the industrial operations. If we have properly understood the basis for the results of such successful innovations as that of the Klaus and Gray group, children reared under such a regime should be much less incompetent in school settings, and much better able to cope with traditional schools than those now coming from our slums.

As a side-effect, another kind of yield is also very likely to come from such Centers for Children and Parents. In utilizing the love and concern that these lower-class parents, like nearly all parents, have for their children, to help motivate them to cooperate in neighborhood groups to create and operate the children's facilities, it is very likely that -- in the process of cooperating in the

care of their children, in seeing their children profit from the facilities, and in learning from the showing -- the parents and older siblings of the infants and young children served will form warm friendships and develop something of a future orientation and a pride in their neighborhood that will foster that interdependence which should do much to damp the hostility which has grown out of the existing frustrations of slum life.

Such is but the barest outline of what looks hypothetically like a promising prescription. It needs trying out. It will take some trial and error to become skilled in the creation of such Centers. President Johnson has already recommended such an approach to the Congress in his message of 8 February 1967. The Office of Economic Opportunity has been authorized to establish 25 such Centers on an experimental basis in order to enable us to learn their pitfalls and to learn how to organize them before an attempt is made to use them more generally later, if their hypothetical promise is realized.

In conclusion, let me say that if the behavioral sciences have discovered anything that approaches, in significance for human welfare, the antibiotics and the contraceptive pills of biochemical science and the atomic energy of the physical sciences, it may well be this new evidence of great plasticity in infantile and early child development. In the light of this new evidence, it is no longer sensible to consider the incompetence of lower-class adults and children, be they black or white, as an inevitable consequence of their biological inheritance and nature. This new evidence is the basis for a justified hope that both this incompetence and the fearful impersonality of our megalopoli can be changed. We of the behavioral sciences and their applications in education and mental health, still have a long way to go, but perhaps we have a start and some guidelines for the immediate implementation of innovations in early childhood education that correspond to the traditions of the Public Health Service.

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